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03 #54
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No. 8879.00

**CLAIM FOR BENEFIT OF
EARLIER-FILED FOREIGN
APPLICATION**

Application of

John G. Savage et al.

MAR 22 2001

Serial No. 09/710,343

Group Art Unit: **Unknown**

Filed: **November 9, 2000**

Examiner: **Unknown**

FOR: SELF-SERVICE TERMINAL

CERTIFICATE OF MAILING

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Shirley Doll

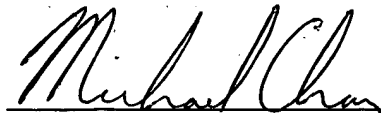
Assistant Commissioner for Patents

Washington, D.C. 20231

Sir:

Applicants wish to claim the benefit of the filing date of the earlier U.K. Application Serial No. **9928737.7**, filed on **December 3, 1999**, recited in the Declaration under the provision of 35 U.S.C. 119, and accordingly, Applicants submit herewith a certified copy of said British application.

Respectfully submitted,



Michael Chan
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Attorney for Applicant(s)

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INVESTOR IN PEOPLE

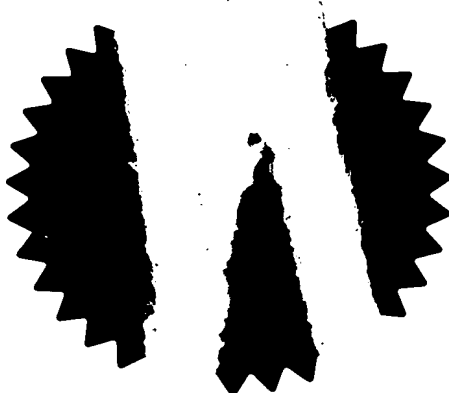
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The Patent Office

Cardiff Road
Newport
Gwent NP9 1RH

1. Your reference

8879

2. Patent application number
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9928737.7

03 DEC 1999

3. Full name, address and postcode of the or of each applicant (underline all surnames)

NCR INTERNATIONAL, INC
1700 SOUTH PATTERSON BOULEVARD
DAYTON, OHIO 45479
UNITED STATES OF AMERICA

Patents ADP number (if you know it)

740935 2001

If the applicant is a corporate body, give the country/state of its incorporation

INCORPORATED IN THE STATE OF DELAWARE

4. Title of the invention

SELF - SERVICE TERMINAL

5. Name of your agent (if you have one)
"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

B WILLIAMSON
INTERNATIONAL IP DEPARTMENT
NCR LIMITED
206 MARYLEBONE ROAD
LONDON NW1 6LY

Patents ADP number (if you know it)

7791767001

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Country

Priority application number
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Date of Filing
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7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing
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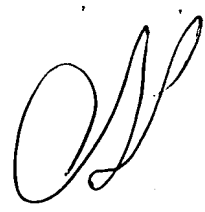
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Claim(s)	2
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Priority documents

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Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination (Patents Form 9/77)

1

Request for substantive examination (Patents Form 10/77)

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I/We request the grant of a patent on the basis of this application.

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Date 03-12-1999

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CHRISTINE SHEPPARD
0171 725 8379

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SELF-SERVICE TERMINAL

The present invention relates to a self-service terminal (SST), such as an automated teller machine (ATM). In particular, the invention relates to an ATM for offering complex financial services.

When a customer is contemplating a financial service, such as a loan or mortgage, the customer generally obtains an estimate of the cost involved from several different institutions before selecting a service provided by a particular institution. This is because many financial services rely on parameters that change frequently or that vary from institution to institution, for example interest rates; these parameters affect the cost of the service. This means that customers typically make a first visit to each of a plurality of financial institutions to obtain information about a financial service, and then a second visit to a selected one of the financial institutions to request the financial service, that is, to execute the transaction.

ATMs are capable of performing complex financial transactions and offering users complex financial services, such as arranging loans, mortgages, and such like. However, ATM users are reluctant to use these services because of the public environment of most ATMs and because of the time required to complete these complex transactions.

It is among the objects of embodiments of the present invention to obviate or mitigate one or more of the above disadvantages or other disadvantages associated with conventional SSTs.

According to a first aspect of the present invention there is provided a self-service terminal characterised in that the terminal includes a communications port, where the terminal is operable to transfer software from the terminal to a portable device using the communications port.

Preferably, the communications port is a wireless port, such as an infra-red port, a radio-frequency port, a Bluetooth (trade mark) port, or such like.

Preferably, the terminal is interconnected to a host, and the terminal is operable to receive software from the host for transferring to a portable device.

Preferably, the software is related to a financial service and includes parameters that are correct at the time the software was transferred. The software may relate to, for example, a mortgage calculator, a loan repayment calculator, or such like.

In some embodiments, the software may have a time to live, so that once the time to live has expired the software automatically deletes itself. In other embodiments, the software may only delete certain parameters once the time to live has expired. This enables a user to update the parameters at an ATM without having to download the entire software program.

Preferably, the software is operable to receive details from a user and to prepare a response program for transmitting back to an SST, where the response program includes details of a transaction to be executed by the SST. This feature has the advantage that the software is able to interact with a user to assist the user in preparing a

transaction (for example, for a loan, the amount of money borrowed and the length of time that the money will be borrowed for). In addition, once the user has prepared a transaction, the software is able to create a sub-program (the response program) for transmitting to an ATM so that the user does not need to re-enter the transaction at the ATM. This reduces the amount of time a user has to spend operating an ATM to execute a transaction.

By virtue of this aspect of the invention, a user is able to download software from a financial institution to his/her portable device. The user is then able to use the software to estimate the cost involved in a particular financial service and to vary certain features of the service, for example, the user may estimate repayments on a loan over one year, two years, and five years, for a loan amount of one thousand pounds, two thousand pounds, or five thousand pounds. As the software is executed by the user's portable device, the user is able to estimate the cost of services in any location (for example, when they are at home) and at any time they desire, thus improving the comfort and privacy of the transaction.

According to a second aspect of the invention there is provided a self-service terminal system comprising a host and a plurality of self-service terminals, the host and the terminals being mutually interconnected by a network, characterised in that the host is operable to transfer software to the terminals for subsequent transfer by a terminal to a portable device presented by a user.

According to a third aspect of the invention there is provided a method of operating a self-service terminal

system characterised by the steps of: providing a software program at a central location; transferring the software program to one or more terminals using a network connection; and, in response to a request from a user, transferring the software program to a portable device presented to a terminal by the user.

According to a fourth aspect of the invention there is provided a self-service terminal characterised in that the terminal includes a communications port, where the terminal is operable to transfer software from the terminal to a portable device using the communications port, and the terminal is configured to receive payment from a user for the transferred software.

The terminal may be configured to receive payment by direct transfer from the user's bank account. Alternatively, the terminal may be configured to receive deposit of cash from the user.

By virtue of this aspect of the invention, the terminal is able to supply a user with valuable software and to make a charge for the software. The software may not be related to financial services, but may be a new application for the portable device.

Preferably, the portable device is a handheld unit, such as a personal digital assistant (PDA), a cellular telephone, or such like.

These and other aspects of the present invention will be apparent from the following specific description, given by way of example, with reference to the accompanying drawings, in which:

Fig 1 is a block diagram of a self-service terminal system in accordance with one embodiment of the present invention;

Fig 2 is a block diagram illustrating the architecture of a portable device used in Fig 1;

Fig 3 is a block diagram illustrating a self-service terminal used in Fig 1;

Fig 4 is a block diagram of a software repository used in Fig 1;

Fig 5 is a schematic diagram illustrating a user operating the portable device of Fig 2 and the SST of Fig 3; and

Fig 6 is a block diagram illustrating the contents of a memory of the portable device of Fig 2 after interaction with a user.

Referring now to Fig 1, which is a block diagram of a self-service terminal system 10 in accordance with one embodiment of the present invention, the system 10 comprises a host 12 interconnected to a plurality of SSTs 14 (only two are shown) by a network 16. The SSTs 14 are in the form of ATMs. The host 12 includes an authorisation facility 18, a back-office facility 20 and a software repository 22 for storing software programs for distribution to ATMs 14 across the network 16.

In addition to authorising ATM transactions, the host 12 operates as an interactive server from which ATMs 14 can download software programs, as will be described in more detail hereinafter. The ATMs 14 are physically remote from each other, but are shown in proximity in Fig 1 for clarity.

Fig 1 also shows a portable device 24 in the form of a PDA, such as a 3Com PalmIIIx (trade mark). The PDA 24 is shown in broken line adjacent to one of the ATMs 14a and in solid line further away from the ATM 14a to illustrate that the PDA 24 is typically presented to an ATM 14a and then used remote from the ATM 14a.

Referring now to Fig 2, which is a block diagram illustrating the architecture of the PDA 24 used in Fig 1, PDA 24 comprises a controller 32 and associated volatile memory 34 and non-volatile memory 36, a touch-sensitive display 38, a serial communication port 40 for receiving a connector, and a wireless communication port 42 in the form of an IrDA (Infra-red data association) compliant infra-red port. The controller 32 is responsible for the operation of the terminal 24, and is coupled to the display 38, serial port 40, and IR port 42. In use, the controller 32 loads a simple operating system 46 into the volatile memory 34.

Referring now to Fig 3, which shows an ATM 14 of Fig 1 in more detail, the ATM 14 includes a display module 64, an encrypting keypad module 66, a magnetic card reader/writer (MCRW) module 68, a receipt printer module 70, a cash dispenser module 72, an ATM controller module 74 for controlling the operation of the various modules, a network connection module 76 for communicating with the host 12 (Fig 1) via network 16 (Fig 1), and an IR port module 78. All of the modules within the ATM 14 are interconnected by a proprietary internal bus 80.

The IR port module 78 includes an IR to electrical signal converter, and conforms to the IrDA standard for wireless communication of data.

The financial institution owning the ATM system 10 creates software programs for one or more of their financial services.

Referring now to Fig 4, which illustrates the software repository 22, in this embodiment, the institution creates a program 90 for a personal loan, and a program 92 for a mortgage. The correct interest rates for each of these services (which depend on the length of time the loan is taken out for, as well as other factors) and other

parameters which affect the cost of the services are hard-coded into these programs 90,92. These programs 90,92 are also given a time-to-live: that is, each program 90,92 is given a time period during which its parameters are valid. The time-to-live is set to one month in this embodiment.

The host 12 automatically transfers the programs 90,92 to each ATM 14. This is typically done during the night, or at some other time period when network traffic is low. If the programs 90,92 are updates to programs that are currently stored on the ATMs 14, then the previous programs are automatically deleted by the ATMs 14. Each ATM 14 stores the transferred programs 90,92 on its ATM controller 74 (Fig 3).

Referring to Fig 5, if a user 96 wishes to receive information relating to the cost of a loan, then the user approaches ATM 14a, inserts his/her magnetic stripe card into the MCRW module 68 via a slot in the ATM 14a, enters a PIN (personal identification number), and selects a download loan program option which the controller 74 presents on display module 64.

The user then presents his/her PDA 24; that is, the user aligns his/her PDA 24 with the IR port module 78 in the ATM 14a.

The ATM 14a then transfers the loan program 90 from the controller 74 to the IR port 78, which converts the electrical signals into an IR signal and transmits the IR signal to the PDA's IR port 42; the transmission is illustrated by broken line 98.

The PDA's IR port 42 receives the IR signal and converts it into an electrical signal for storing in the non-volatile memory 36. The ATM 14a then returns the magnetic stripe card to the user 96 and the user 96 leaves the vicinity of the ATM 14a.

At some later time, the user 96 can execute the loan program 90 stored in non-volatile memory 36, so that the loan program 90 is loaded into volatile memory 34.

Loan program 90 allows the user 96 to enter user-specific data and generates estimates for the cost of a loan for any time period entered by the user 96. Each time the loan program 90 is executed, the program 90 determines if the time-to-live has elapsed: if the time-to-live has elapsed then the loan program 90 deletes itself from the PDA 24.

Referring to Fig 6, if the user 96 decides to obtain a loan based on details he/she has entered into the loan program 90, then the program 90 creates a response program 100 containing the entered details for the user 96. The response program 100 is a prepared transaction that is operable to execute directly on an ATM controller 74. Thus,

the user 96 conveys the PDA 24 to an ATM 14 and transmits the response program 100 to the ATM 14, which executes the transaction directly and confirms to the user 96 that a loan has been agreed by the ATM 14.

Various modifications may be made to the above described embodiment within the scope of the invention, for example, in other embodiments, the SSTs may be information kiosks rather than ATMs. In other embodiments, the time-to-live may be shorter or longer than one month. In other embodiments, services other than financial services may be provided by the software program. In other embodiments, the ATM may charge for the software that it transferred to the user's PDA. In other embodiments, the portable device may be a cellular telephone, or such like.

Claims

1. A self-service terminal (14) characterised in that the terminal (14) includes a communications port (78), where the terminal (14) is operable to transfer software (90,92) from the terminal (14) to a portable device (24) using the communications port (78).

2. A terminal according to claim 1, wherein the communications port (78) is a wireless port.

3. A terminal according to claim 1 or 2, wherein the terminal is interconnected to a host (12), and the terminal (14) is operable to receive software (90,92) from the host (12) for transferring to a portable device (24).

4. A terminal according to any preceding claim, wherein the software relates to a financial service and includes parameters that are correct at the time the software is transferred.

5. A terminal according to any preceding claim, wherein the software has a time to live, so that once the time to live has expired the software automatically deletes itself.

6. A terminal according to any preceding claim, wherein the software is operable to receive details from a user and to prepare a response program for transmitting back to an SST, where the response program includes details of a transaction to be executed by the SST.

7. A self-service terminal system (10) comprising a host (12) and a plurality of self-service terminals (14), the host (12) and the terminals (14) being mutually

interconnected by a network (16), characterised in that the host (12) is operable to transfer software (90,92) to the terminals (14) for subsequent transfer by a terminal (14) to a portable device (24) presented by a user (96).

8. A method of operating a self-service terminal system characterised by the steps of: providing a software program at a central location; transferring the software program to one or more terminals using a network connection; and, in response to a request from a user, transferring the software program to a portable device presented to a terminal by the user.

9. A self-service terminal (14) characterised in that the terminal includes a communications port (78), where the terminal is operable to transfer software (90,92) from the terminal to a portable device (24) using the communications port (78), and the terminal is configured to receive payment from a user (96) for the transferred software (90,92).

SELF-SERVICE TERMINAL

Abstract

A self-service terminal system (10) is described. The system (10) includes a self-service terminal (14) and a host (12) interconnected by a network (16). The host (12) is operable to transfer software (90,92) to the terminals (14) for subsequent transfer by a terminal (14) to a portable device (24) presented by a user (96). Each terminal (14) includes a communications port (78), so that the terminal (14) is operable to transfer software (90,92) from the terminal (14) to a portable device (24) using the communications port (78). A method of operating a self-service terminal system is also described.

[Fig 5]

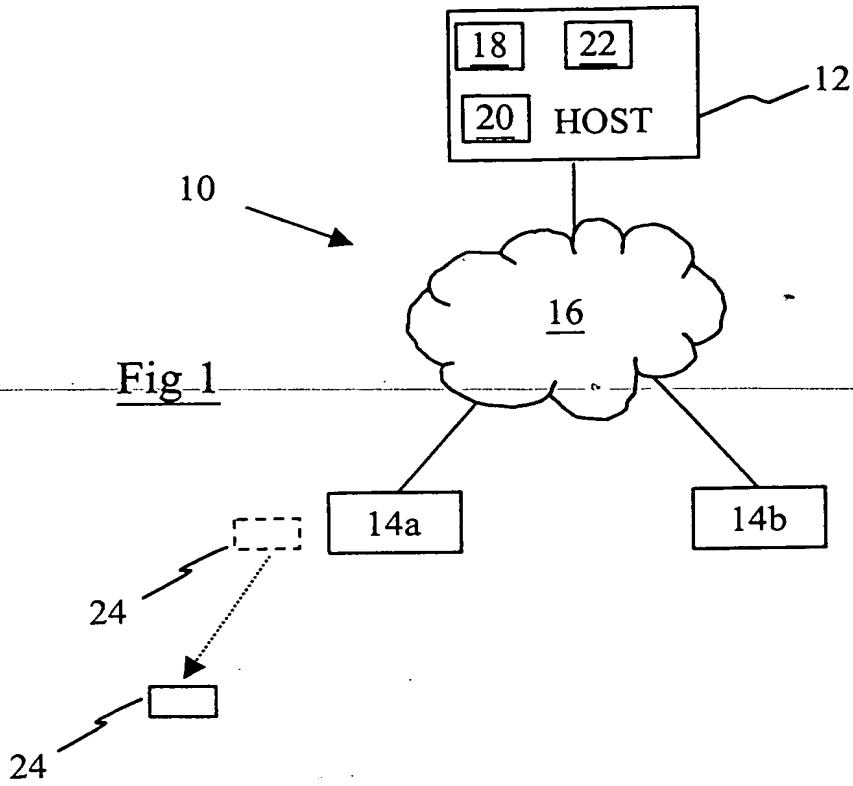
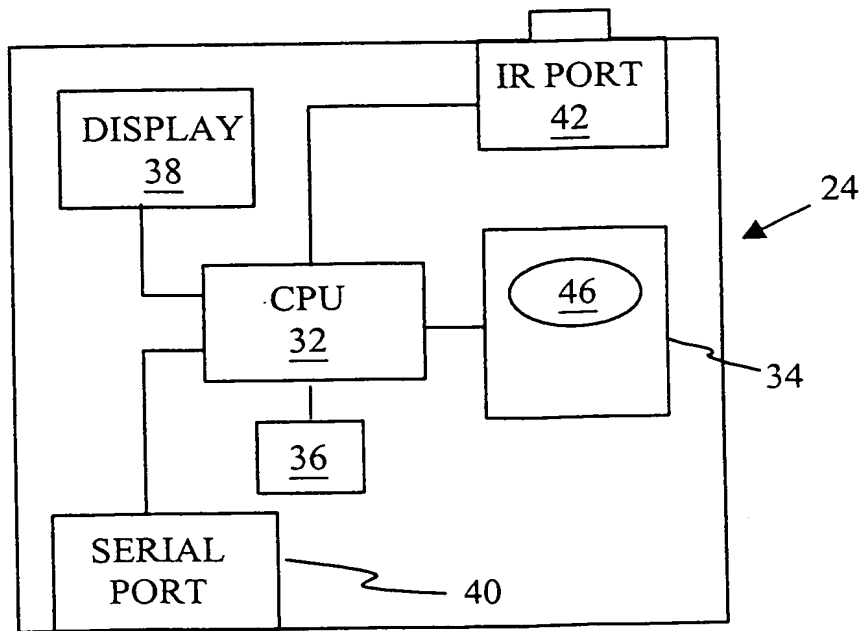


Fig 2



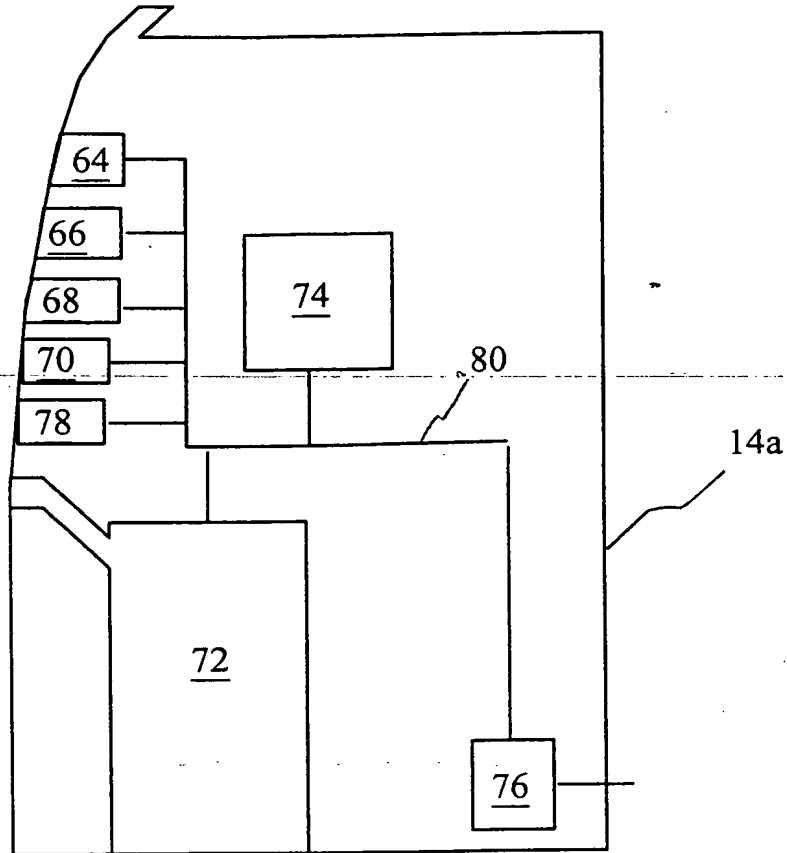


Fig 3

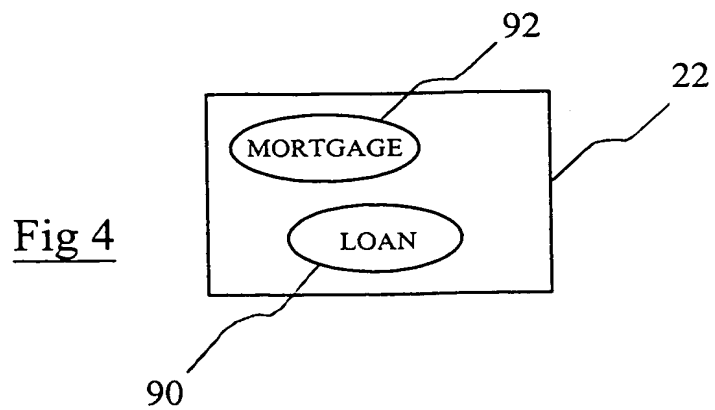


Fig 4

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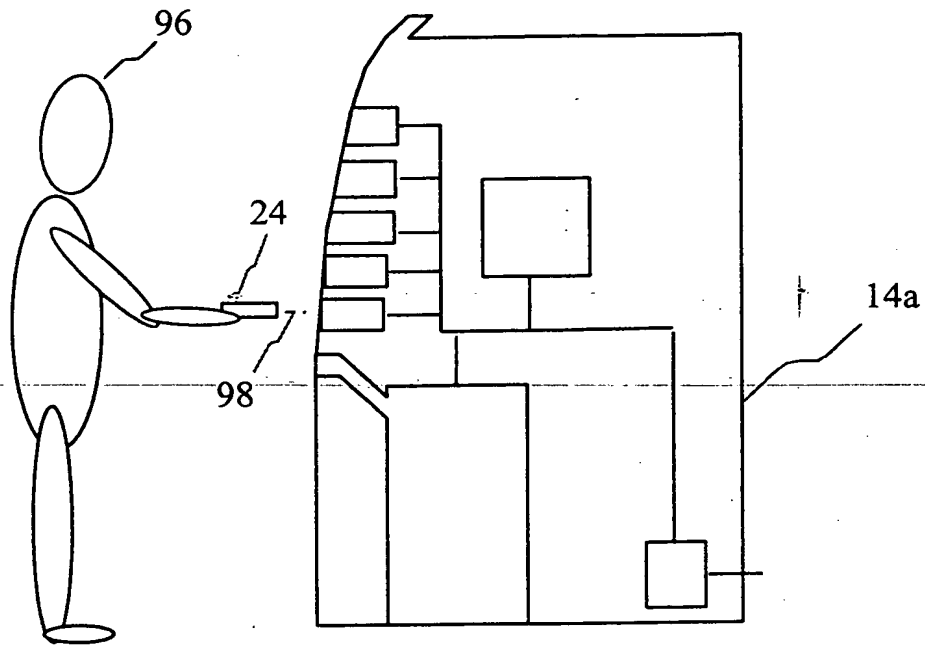


Fig 5

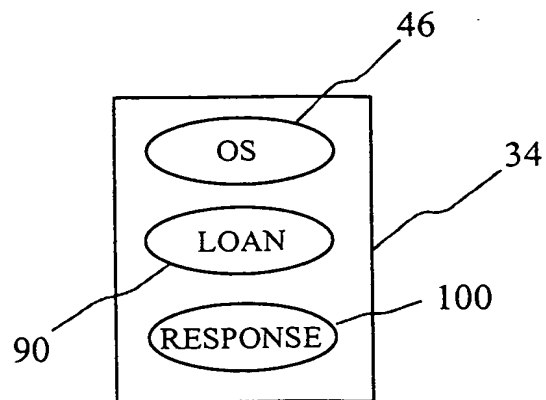


Fig 6

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